

***PJM Generator Interconnection Request
Queue #V2-025
Turnpike 13.8kV
Feasibility/Impact Study Report***

October 2009
#565046
Revised May 4, 2010

V2-025 Turnpike 13.8kV Feasibility/Impact Study

General

New Jersey Meadowlands Commission has submitted an interconnection request for a 7.0 MW solar generation project at the 1-A Landfill in Kearny, New Jersey. During the kick-off teleconference New Jersey Meadowlands Commission reduced the project to 5.0 MW. The request for Capacity Interconnection Rights is 1.9MW (38% of the maximum facility output). The proposed in-service date for the project is March 1, 2010.

Direct Connection

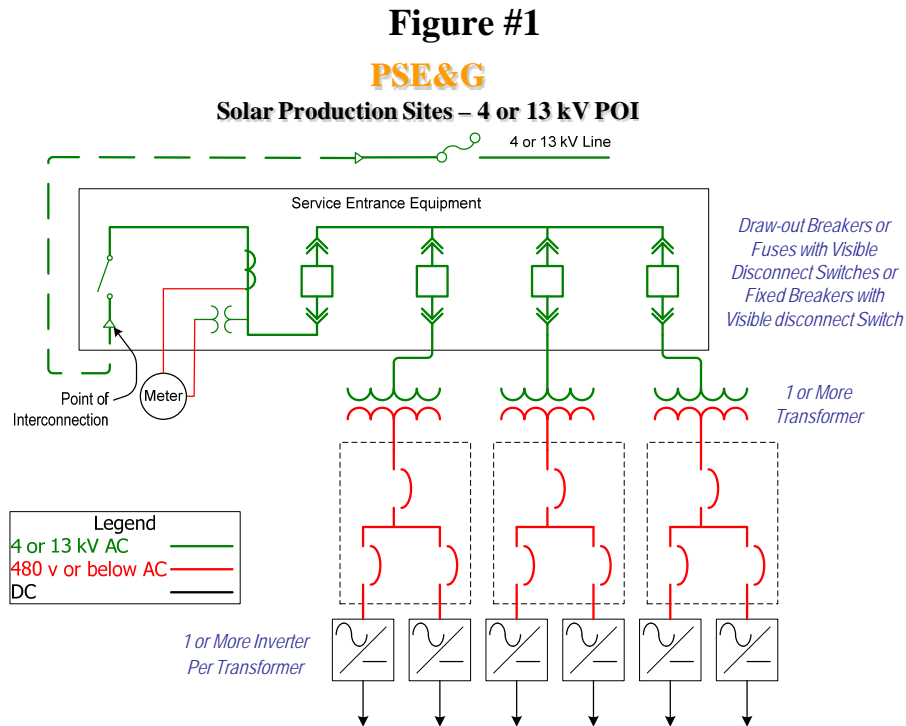
The solar project will be connected to the 13kV circuit that is on Newark Turnpike. New Jersey Meadowlands Commission must install 13kV switchgear that is assumed to be 1,000 feet off Newark Turnpike. See Figure #1. PSE&G will extend the 13kV feeder 1000 feet to the customer's switchgear, install revenue metering, install telemetering facilities and install feeder metering at Turnpike Substation. The total estimated cost for the PSE&G work is **\$337,000**.

Extend 13kV feeder	\$200,000
Install Revenue Metering	\$ 27,000
Install telemetering	\$ 35,000
Install feeder metering	\$ 75,000
<u>Total</u>	<u>\$337,000</u>

The costs for this project have been updated and are shown below based upon a site meeting held between the developers and PSE&G's local operating division. Further, the method to transmit solar output data from the site to PJM has changed.

- Extend a Turnpike 13-kV feeder to the customer's 13-kV switchgear. Following an on site review, it will only be necessary to replace existing wire. The new estimate assumes the developer will be able to obtain an easement for trenching. Supply will still be from a Turnpike 13-kV circuit and the new estimated costs are **\$33,000**.
- ∅ Install Revenue Metering - unchanged and still estimated to cost **\$27,000**.
- ∅ Install Telemetering Facilities – The cost was \$35,000 based on installation by PSE&G. The Customer is now expected to install necessary telemetering facilities to transmit data directly to PJM. It should also be noted the Customer must sign an agreement allowing PSE&G to extract this data from PJM into the EMS system used in our System Operations Center.
- ∅ Install Feeder Metering at Turnpike Substation – unchanged and still estimated to cost **\$75,000**.

Based on the above revisions, the total estimated costs are now \$135,000.



Network Impacts

The system, as planned, was evaluated for compliance with reliability criteria. The New Jersey Meadowlands Commission V2-025 project was studied as 1.9 MW capacity resource. The results are summarized below.

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems identified

Multiple Facility Contingency

(Double Circuit Tower Line, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

No problems identified

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

No problems identified

Stability

Not required because the project is under 30 MW.

System Reinforcements

None.

Cost Allocation

The V2-025 project is responsible for 100% of the estimated \$135,000 cost for the direct connection facilities described above.

***PJM Generator Interconnection Request
Queue #V2-025
Turnpike 13.8kV
Feasibility/Impact Study Report***

October 2009
#565046
Revised May 4, 2010

V2-025 Turnpike 13.8kV Feasibility/Impact Study

General

New Jersey Meadowlands Commission has submitted an interconnection request for a 7.0 MW solar generation project at the 1-A Landfill in Kearny, New Jersey. During the kick-off teleconference New Jersey Meadowlands Commission reduced the project to 5.0 MW. The request for Capacity Interconnection Rights is 1.9MW (38% of the maximum facility output). The proposed in-service date for the project is March 1, 2010.

Direct Connection

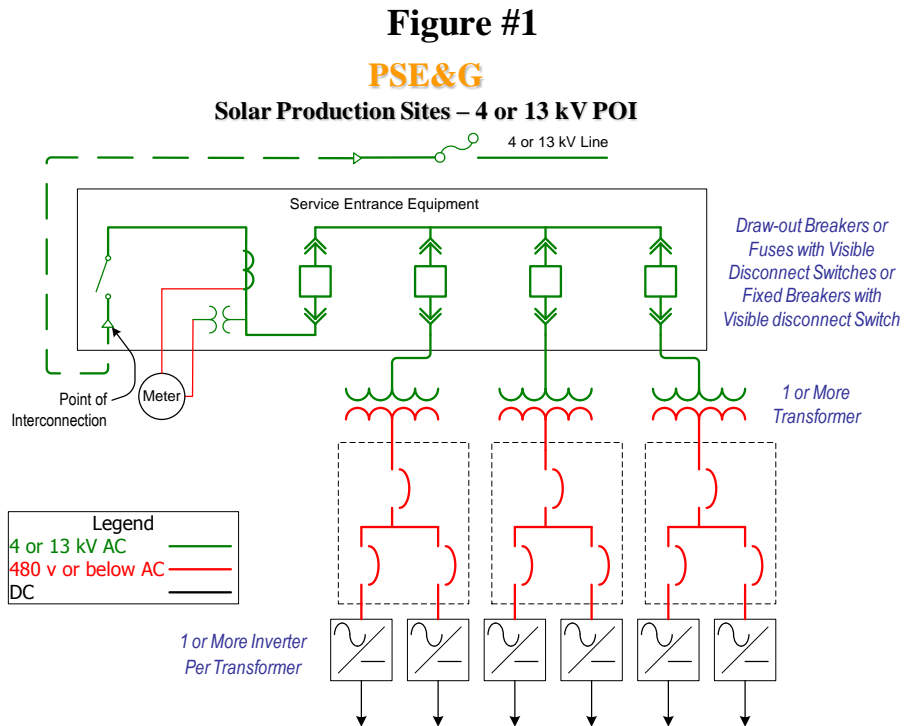
The solar project will be connected to the 13kV circuit that is on Newark Turnpike. New Jersey Meadowlands Commission must install 13kV switchgear that is assumed to be 1,000 feet off Newark Turnpike. See Figure #1. PSE&G will extend the 13kV feeder 1000 feet to the customer's switchgear, install revenue metering, install telemetering facilities and install feeder metering at Turnpike Substation. The total estimated cost for the PSE&G work is **\$337,000**.

Extend 13kV feeder	\$200,000
Install Revenue Metering	\$ 27,000
Install telemetering	\$ 35,000
<u>Install feeder metering</u>	<u>\$ 75,000</u>
Total	\$337,000

The costs for this project have been updated and are shown below based upon a site meeting held between the developers and PSE&G's local operating division. Further, the method to transmit solar output data from the site to PJM has changed.

- Extend a Turnpike 13-kV feeder to the customer's 13-kV switchgear. Following an on site review, it will only be necessary to replace existing wire. The new estimate assumes the developer will be able to obtain an easement for trenching. Supply will still be from a Turnpike 13-kV circuit and the new estimated costs are **\$33,000**.
- Ø Install Revenue Metering - unchanged and still estimated to cost **\$27,000**.
- Ø Install Telemetering Facilities – The cost was \$35,000 based on installation by PSE&G. The Customer is now expected to install necessary telemetering facilities to transmit data directly to PJM. It should also be noted the Customer must sign an agreement allowing PSE&G to extract this data from PJM into the EMS system used in our System Operations Center.
- Ø Install Feeder Metering at Turnpike Substation – unchanged and still estimated to cost **\$75,000**.

Based on the above revisions, the total estimated costs are now \$135,000.



Network Impacts

The system, as planned, was evaluated for compliance with reliability criteria. The New Jersey Meadowlands Commission V2-025 project was studied as 1.9 MW capacity resource. The results are summarized below.

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems identified

Multiple Facility Contingency

(Double Circuit Tower Line, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

No problems identified

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

No problems identified

Stability

Not required because the project is under 30 MW.

System Reinforcements

None.

Cost Allocation

The V2-025 project is responsible for 100% of the estimated \$337,000 cost for the direct connection facilities described above.

***PJM Generator Interconnection Request
Queue #V2-025
Turnpike 13.8kV
Feasibility/Impact Study Report***

**October 2009
#565046**

V2-025 Turnpike 13.8kV Feasibility/Impact Study

General

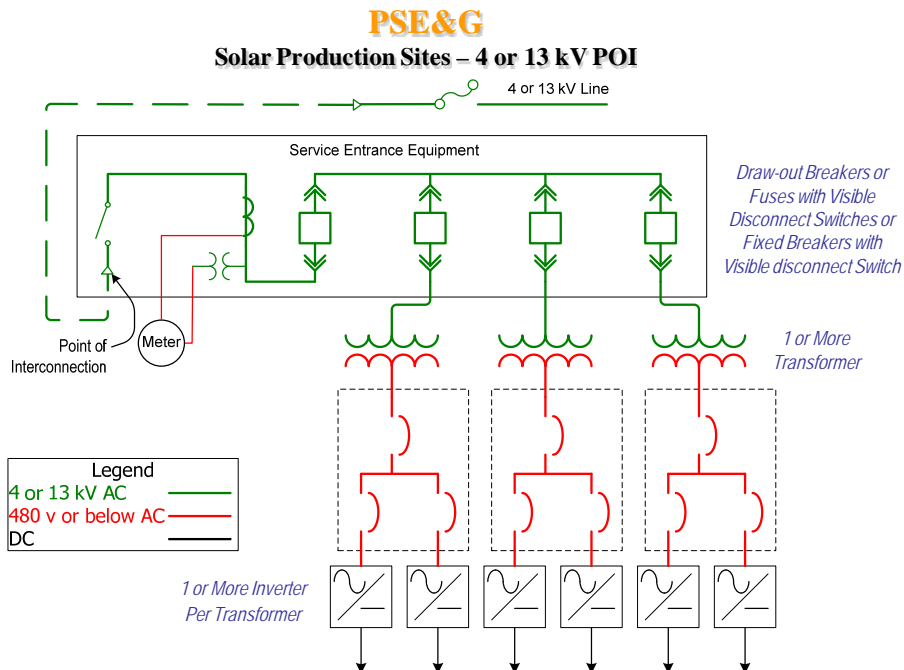
New Jersey Meadowlands Commission has submitted an interconnection request for a 7.0 MW solar generation project at the 1-A Landfill in Kearny, New Jersey. During the kick-off teleconference New Jersey Meadowlands Commission reduced the project to 5.0 MW. The request for Capacity Interconnection Rights is 1.9MW (38% of the maximum facility output). The proposed in-service date for the project is March 1, 2010.

Direct Connection

The solar project will be connected to the 13kV circuit that is on Newark Turnpike. New Jersey Meadowlands Commission must install 13kV switchgear that is assumed to be 1,000 feet off Newark Turnpike. See Figure #1. PSE&G will extend the 13kV feeder 1000 feet to the customer's switchgear, install revenue metering, install telemetering facilities and install feeder metering at Turnpike Substation. The total estimated cost for the PSE&G work is **\$337,000**.

Extend 13kV feeder	\$200,000
Install Revenue Metering	\$ 27,000
Install telemetering	\$ 35,000
Install feeder metering	\$ 75,000
Total	\$337,000

Figure #1



Network Impacts

The system, as planned, was evaluated for compliance with reliability criteria. The New Jersey Meadowlands Commission V2-025 project was studied as 1.9 MW capacity resource. The results are summarized below.

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems identified

Multiple Facility Contingency

(Double Circuit Tower Line, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

No problems identified

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

No problems identified

Stability

Not required because the project is under 30 MW.

System Reinforcements

None.

Cost Allocation

The V2-025 project is responsible for 100% of the estimated \$337,000 cost for the direct connection facilities described above.